

Parents' Reports of the Body Shape and Feeding Habits of 36-Month-Old Children: An Investigation of Gender Differences

Jill M. Holm-Denoma, MS^{1*}
 Peter M. Lewinsohn, PhD²
 Jeffrey M. Gau, BA²
 Thomas E. Joiner, Jr., PhD¹
 Ruth Striegel-Moore, PhD³
 Ainhoa Otamendi, PhD¹

ABSTRACT

Objective: The current study examined parental perception of offspring body shape, differential reporting of offspring eating behaviors by mothers and fathers, and gender-specific patterns of offspring feeding habits.

Methods: Parents of a community sample of 36-month-old children ($N = 93$) completed measures regarding their offspring's feeding patterns and body shape.

Results: Results revealed noteworthy correlates (e.g., concerns about their

child's appetite) of parental perception of offspring weight status. They further suggested that mothers and fathers often differed in their accounts of their child's eating habits, and that parents report certain eating behaviors differently depending on the gender of their child.

Conclusion: Clinical and theoretical implications are discussed. © 2005 by Wiley Periodicals, Inc.

Keywords: feeding patterns; body shape; eating habits; gender differences

(*Int J Eat Disord* 2005; 38:228–235)

Introduction

Although a great deal of information is available regarding eating behaviors and body image in adolescents, relatively little is known about the eating and feeding practices of young children. General findings suggest that the same determinants of eating disorders and body image concerns in adolescents may underlie these problems in children (Ricciardelli & McCabe, 2001). Researchers have acknowledged a continuum of eating difficulties evident in young children, such as pickiness, that originate at birth and continue throughout early childhood (Lask & Bryant-Waugh, 2000). These common food-related problems are typically transitory, developmentally appropriate, and do not cause major medical worry.

Less information is available about how parents perceive their children's body size/shape and the eating habits of their offspring, if these perceptions

are moderated by offspring gender. This information is important because although eating disorders are often manifested during or after puberty, their critical antecedents are likely established earlier in life (Gardner, Stark, Friedman, & Jackson, 2000) and are likely linked to family values associated with food intake.

Parents' Perceptions of Children's Body Shape and Size

Little research is available regarding parents' perceptions of their offspring's body size (with the exception of Stein, Murray, Copper, & Fairburn, 1996, who reported that depressed mothers were more likely than unaffected mothers to accurately assess their child's size). Understanding how parents view their child's body shape and associated weight is important, however, because it may affect the offspring feeding practices of that parent. A noteworthy line of research has shown that parents may engage in restrictive feeding patterns when they perceive their children as overweight or are concerned about their offspring's risk of becoming overweight (Fisher & Birch, 1999a, 1999b; Francis, Hofer, & Birch, 2001; Spruijt-Metz, Lindquist, Birch, Fisher, & Goran, 2002). Ironically, however, children who are routinely subject to parentally imposed restrictive feeding are more likely than their unrestricted counterparts to overeat when given the option of unlimited eating in a laboratory setting (Fisher & Birch, 1999a, 1999b). Therefore, perceived offspring weight is seemingly linked to

Accepted 22 November 2004

Supported, in part, by National Institute of Mental Health award MH56604.

*Correspondence to: Jill M. Holm-Denoma, MS, Department of Psychology, Florida State University, Tallahassee, FL 32306-1270. E-mail: denoma@psy.fsu.edu

¹ Department of Psychology, Florida State University, Tallahassee, Florida

² Oregon Research Institute, Eugene, Oregon

³ Department of Psychology, Wesleyan University, Middletown, Connecticut

Published online 6 October 2005 in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/eat.20180

© 2005 Wiley Periodicals, Inc.

parental feeding practices, and parental feeding practices affect children's future interactions with food.

Parents' Role in Children's Eating Behaviors

Parents play an integral role in the development of their children's eating behaviors. They influence their children through the foods they make accessible, their personal eating styles (Cutting, Fisher, Grimm-Thomas, & Birch, 1999; Hood et al., 2000), their behavior at mealtimes (Klesges, Malott, Boschee, & Weber, 1986), and the ways in which they feed their offspring (e.g., Birch & Fisher, 1998). Parental child-feeding behaviors have also been correlated with children's food selection and preferences (Klesges, Stein, Eck, Isbell, & Klesges, 1991). Although parents certainly impact their offspring's eating habits, it is possible that mothers and fathers may have differential effects on the feeding habits of their girl and boy children.

Many studies have shown that mothers are social reinforcers and role models for their daughters' eating attitudes and behaviors (Hill & Franklin, 1998; Mukai, 1996; Pike & Rodin, 1991). For example, Jacobi, Agras, and Hammer (2001) found evidence that maternal eating disorders and disturbances, when compared with those of fathers, have an impact on female offspring as young as 8 years old. Specifically, maternal restraint and disinhibition (as related to food consumption) predict higher body dissatisfaction and dieting rates in daughters but not sons. Thelen and Cormier (1995) have also reported that mothers who encourage their children to lose weight are likely to have daughters (but not sons) who desire to be thinner, have higher body weights, and engage in increased amounts of dieting. Fathers, too, have been shown to primarily influence their daughters' body dissatisfaction rates (Keel, Heatherton, Harnden, & Hornig, 1997).

Parents have also been shown to affect their sons' eating-related behaviors in specific ways. For example, mothers have been shown to give their adolescent male offspring notably more praise regarding body size than fathers (Ricciardelli, McCabe, & Banfield, 2000). In addition, when parents are concerned about their sons' body size, mothers encourage their sons to lose weight and eat less, whereas fathers push their sons to exercise more (Ricciardelli et al., 2000).

How early in life do these gender-specific interactions between parents and offspring occur? What are the long-term effects of these gender-specific relationships? Currently, little is known about the

rates of differential parental treatment by gender in very young children. Studies are needed that examine the differential effects of parent and offspring gender as they relate to eating attitudes and behaviors. The current study will begin to assess the immediate effects that mothers and fathers differentially have on their offspring's intake.

Gender Differences in Offspring Eating Patterns

It has been reported that during infancy and childhood, girls and boys exhibit similar eating behaviors (L.L. Birch, Aug. 1, 1989, personal communication in an article by Rolls, Federoff, & Guthrie, 1991), although few empirical studies have assessed this area. On one hand, it is plausible that girls and boys, who develop at similar ages and speed during early childhood, would have comparable eating habits. However, because parental perception of offspring body size can affect feeding habits, and these perceptions have been shown to differ by offspring gender, it is possible that male and female children may engage in qualitatively different feeding practices.

Initial research on this topic suggests that eating habits are similar regardless of gender. For example, the frequency of problem meals (struggle over eating and unpleasantness at meals) is the same for girls and boys (Marchi & Cohen, 1990). Specifically, Rydell, Dahl, and Sundelin (1995) reported that approximately one third of boys and of girls are choosy eaters. Marchi and Cohen further reported that rates of pica did not differ as a function of gender in children aged 1–10 years old. To the authors' knowledge, the only gender difference that has been empirically documented is that picky eating is more common in girls than boys (Marchi & Cohen, 1990). Clearly, more research needs to be done regarding gender differences in eating behaviors in young children, as understanding normal eating behaviors will help clinicians identify and treat problematic habits.

In this study, we will compare reports made by fathers and mothers to determine whether they generally agree on the nature of offspring's eating patterns. In addition, we will examine the possibility that parental gender moderates parental reports of offspring eating behaviors, such that parents of a particular gender may tend to report greater rates of offspring feeding problems, regardless of offspring gender. We will also assess whether parental reports differ as a function of offspring gender. Finally, we will assess parental perception of offspring body size and its correlates.

Methods

Participants and Procedure

The results to be presented are based on data from the Oregon Adolescent Depression Project (OADP). It began as a two-panel, randomly selected sample of high school adolescents (14–18 years of age) assessed between 1985 and 1990. The initial assessment included psychosocial and diagnostic variables. The most recent assessment (for the purposes of the current article, T3, age 24 years) involved all individuals with a history of psychopathology ($n = 644$), and a randomly selected set of participants with no history of mental disorder ($n = 457$). More details about this sample are available in Lewinsohn, Hops, Roberts, Seeley, and Andrews (1993) and Lewinsohn, Rohde, Klein, and Seeley (1999).

OADP participants who had an infant, would conceive a child or had a partner who would conceive a child over a 3-year recruitment period, and lived in Oregon were recruited into the Infant Development Study (IDS). Eligible families had a participation rate of 83% and demographic differences between those who did and those who did not participate were small (for a more detailed description of the sample, see Forbes, Cohn, Allen, & Lewinsohn, in press). Families were initially recruited to have their children assessed (by filling out questionnaires, completing diagnostic interviews, and participating in laboratory tasks) at ages 3, 6, 12, and 24 months. The mean time between T3 and IDS assessment at 3 months was 4.7 years ($SD = 1.7$). At the first IDS assessment, there were 166 mothers, 152 fathers, and 166 newborns participating. No problematic attrition rates were observed (approximately 98% of participants returned).

Participants were invited to continue in the IDS by completing a 36-month assessment that involved completing questionnaires and diagnostic interviews, and participating in laboratory tasks. The data collected at this 36-month assessment are the focus of the current study. Due to financial constraints, the 36-month assessment period was terminated early. At cessation, 106 families were eligible for the 36-month assessment, 93 (87.7%) of whom participated.

Parents (93 mothers and 54 fathers) who completed the 36-month assessments and their children ($N = 93$) comprise the current sample. Mothers' average age was 29.3 years ($SD = 2.4$). Eighty-nine (95.7%) were White, 1 (1.1%) was Black, 2 (2.2%) were Asian, and 1 (1.1%) was Native American. Ninety-five percent had a high school diploma; 16% had earned a bachelor's degree or higher. Fathers' average age was 30.6 years ($SD = 3.0$). Ninety-two percent had graduated from high school; 31% had earned a bachelor's degree or higher. Forty-six (85.2%) were White, 5 (9.3%) were Hispanic, 1 (1.9%) was Black, 1 (1.9%) was Native American, and 1 (1.9%) classified himself as other. The majority of couples were married at the 36-month

assessment (84.8%), although 5.5% had never married and 9.7% were divorced or separated. All mothers and fathers were biologically related to the infants.

Most of the infants were female (59.1%) and White (82.7%). If either of the child's parents were ethnic minority group members, the child was given minority status. If both parents were minority group members, the child was given the mother's status. Using this system, 2.2% of the infants were Black, 7.5% were Hispanic, 3.2% were Native American, 2.2% Asian, and 2.2% were other. After being adjusted for prematurity, the average age at the 36-month assessment was 36.5 months ($SD = 1.3$) and 37.1 months ($SD = 1.9$) for girls and boys, respectively.

Self-reported height and weight data were available for 81 (87.1%) mothers and 45 (83.3%) fathers. The mothers' average height was .07 m. ($SD = 1.66$ m), weight was 77.0 kg ($SD = 21.9$ kg), and body mass index (BMI) was 27.8 ($SD = 93.9$ kg). The fathers' average height was 1.81 m. ($SD = 0.8$ m), weight was 93.9 kg ($SD = 15.0$ kg), and BMI was 29.0 ($SD = 5.5$). Parents of 72 (77.4%) children also reported their children's height and weight. The infants' average height (as per mother report) was .96 m. ($SD = .08$ m), weight was 15.6 kg ($SD = 2.1$ kg), and BMI was 16.9 ($SD = 2.7$). No differences in demographic, overall personal, and overall social sufficiency were found for girls or boys according to the Vineland Adaptive Behavior Scales.

Measures

Demographics were assessed annually by questionnaires.

Oregon Research Institute Child Eating Behavior Inventory (ORI-CEBI). Several existing instruments were compiled to create a comprehensive questionnaire that examined parents' perceptions of their child's eating and feeding behaviors (see Lewinsohn et al., in press), administered at the 36-month assessment. Parents were asked to report their child's height and weight, and to comment on their child's behavior during the past month by addressing the following constructs: dyadic interactions during the child's feeding times, the child's and parent's affect during feedings, refusal to eat, selective eating, and overeating. Parents were also asked to describe their child as thin, average, plump, or fat. An additional 63 items were created to assess (a) medical conditions that may have resulted in feeding problems (such as failure to thrive), and (b) specific foods the child refuses to eat (such as bread and vegetables). Responses on all items were dichotomized into either a score of 0 or 1 (indicative of the absence or presence of feeding problem, respectively).

Exploratory factor analysis indicated that four domains were tapped in the measure (pickiness, food refusal, struggle for control during mealtimes, and positive parental behaviors during mealtimes). Results showed that the Struggle for Control factor was related to other problematic

behaviors as measured by the CBCL, the Food Refusal factor was related to mothers' lifetime history of psychopathology, and the Pickiness factor was related to mothers' lifetime history of alcohol dependence. The measure additionally indicated that the most common child problems reported by mothers were the spitting out of food during feedings and becoming upset when food was restricted.

This research was reviewed and approved by an institutional review board.

Results

Consistency of Mother and Father Reports of Children's Problematic Eating

We examined consistency in parents' reports of the four problematic eating domains described by Lewinsohn et al. (in press) to assess whether mothers' ratings on the whole correlated with fathers' ratings on the whole. This question examined whether there were any general, systematic differences in mothers' and father's reports of offspring feeding behavior. Mothers and fathers showed moderate to high interrater reliability when reporting children's behavior in the pickiness, food refusal, and struggle for control domains ($r = .47, p < .001$; $r = .82, p < .0001$; and $r = .57, p < .001$, respectively). However, parents' reports in the positive parenting domain were not related ($r = -.03, p = \text{not significant [NS]}$). This finding makes sense given that each parent was individually reporting on his/her positive mealtimes interactions with his/her child. Therefore, it seems that mothers and fathers are typically reporting on the same constructs (excluding positive parenting behaviors). Further analyses indicated that parents maintained similar agreement on each of the four factors regardless of whether they were reporting on male or female offspring.

Next, we examined whether mothers and fathers were providing similar reports on the same child by using paired t tests (mean values are presented in Table 1). Specifically, we tested whether a mother and father rated the same child similarly on a given domain (e.g., pickiness). Results showed that mothers and fathers differentially reported on the same child in the pickiness, struggle for control,

and positive parenting behaviors domains, $t(50) = -2.86, p < .01$; $t(49) = -4.19, p < .001$; $t(53) = -30.95, p < .001$, respectively. In each of these domains, fathers always rated their child higher than mothers. However, parents typically did not differ when rating their child on the food refusal factor, $t(51) = .26, p = \text{NS}$.

Parental Perception of Child's Weight

Descriptive data regarding the BMI of children, based on the height and weight as reported by parents, were examined. There was no significant difference in the mean BMI for girls (16.94) and boys (16.92) at 36 months. Therefore, the 36-month-old girls and boys had approximately equal BMIs. These sample averages were roughly similar to the population median BMIs for 36-month-old girls (15.6) and boys (16.0) as reported by the Centers for Disease Control (CDC), 2000. Approximately 10% of girls and 3% of boys were underweight, whereas 20% of girls and 18% of boys were overweight (per CDC BMI guidelines).

Parents' subjective appraisal of their child's body size was assessed using a single item that asked, "How would you describe your child? thin, average, plump or fat." Thirteen percent of parents described their child as thin, 76% as average, and 10% as plump. No parents described their child as fat. Mothers and fathers showed agreement when describing their child's body size, $F(1,51) = 1.15, p = \text{NS}$. Neither mothers' nor fathers' subjective appraisals of their child's body size were significantly correlated to any of the problematic feeding factors identified by Lewinsohn et al. (in press).

Correlations between maternal and paternal subjective appraisals of child's body size were computed with a variety of items regarding eating patterns to see which, if any, exhibited significant relationships. These items were considered independently of the four factor scores because they each exemplified a noteworthy, stand-alone concept of interest. These items broadly sampled an assortment of domains including offspring appetite, parental feeding patterns, parental perceptions of offspring body size, and offspring medical complications. A list of these items can be found in Table 2, and a correlation matrix can be found in Table 3. Test-retest reliabilities for the items are shown in Table 2, as well (it is important to consider that items with low reliability may be a reflection of developmental changes in young children).

Mothers' subjective appraisals of child's body types were negatively correlated with worries about their child becoming underweight, $r = -.44, p < .001$. Thus, mothers who described their chil-

TABLE 1. Parental means on selected variables

	Mother	Father
Pickiness	1.70	1.92
Struggle for control	1.88	3.56
Food refusal	0.44	0.48
Positive parenting	1.70	6.50

TABLE 2. List of items regarding eating patterns

Item	1 Year Test-Retest
Do you ever insist that your child eat more than he/she wants to?	.15
In your opinion, does your child eat enough food?	.35
Does your child have a good appetite?	.43*
Do you worry about your child becoming overweight?	-.04
Do you worry about your child becoming underweight?	.80**
Is your child's appetite poor?	.35
Do you ever limit the amount of food that your child eats?	.49*
Do you feed your child reduced-calorie foods such as low fat milk, fat-free yogurt, or sugar-free teas?	.51**
Do you restrict your child's diet due to a food allergy or intolerance concerns?	.68**

* $p < .05$. ** $p < .01$.

dren as more overweight were not likely to worry that their child would become underweight. However, maternal subjective appraisals were not significantly related to maternal worries about their child becoming overweight, $r = .17$, $p = \text{NS}$. Maternal worries of offspring becoming overweight correlated with worries of offspring becoming underweight were not significant, $p = -.12$, $p = \text{NS}$. Fathers' subjective appraisals of the offspring's body types were positively correlated with worries about their child becoming overweight, $r = .31$, $p < .05$. Therefore, fathers who described their children as overweight were significantly more likely to worry about their children becoming overweight. However, there was no significant relationship between father's perceptions of their child's body and worries about their child becoming underweight, $r = -.27$, $p < .06$. Therefore, there was no significant relationship between father's percep-

tions of their child's body and worries about their child becoming underweight.

Because approximately one third of parents had experienced a depressive disorder in their lifetime, analyses examined whether parental depression affected how parents viewed their child's body shape/size. Analyses revealed a trend of differences in perception of offspring body shape among mothers such that mothers with a history of depression rated their children as plumper than those without a depressive history, $t(90) = -1.89$, $p < .06$. Conversely, fathers without depression viewed their children as plumper than those with depression, $t(51) = 2.1$, $p < .05$.

Gender Differences in Offspring Eating Habits

Next, we examined whether there were offspring gender differences in the rates of problematic feeding behaviors. Analyses demonstrated that girls and boys had similar average scores when rated by their parents in three of the domains identified by Lewinsohn et al. (in press): mother's reports: pickiness, $t(85) = -.20$, $p = \text{NS}$; struggle for control, $t(90) = -1.5$, $p = \text{NS}$; positive parental behaviors, $t(91) = .73$, $p = \text{NS}$; fathers' reports: pickiness, $t(50) = -.22$, $p = \text{NS}$; struggle for control, $t(49) = -1.5$, $p = \text{NS}$; positive parental behaviors, $t(52) = .42$, $p = \text{NS}$. Mothers reported no gender differences in rates of food refusal by offspring gender, $t(90) = -.05$, $p = \text{NS}$, whereas fathers did, $t(51) = -2.02$, $p < .05$. Fathers reported that their sons refused food more often than their daughters. Mean scores are reported in Table 4.

Neither mothers nor fathers differentially described their children's body size/shape as a function of offspring gender. There were, however,

TABLE 3. Intercorrelation Matrix of Items Listed in Table 2

	1	2	3	4	5	6	7	8	9
1) Do you ever insist that your child eat more than he/she wants to?	–								
2) In your opinion, does your child eat enough food?	-.30**	–							
3) Does your child have a good appetite?	-.20	.62**	–						
4) Do you worry about your child becoming overweight?	.08	.15	.16	–					
5) Do you worry about your child becoming underweight?	.35**	-.57**	-.55**	-.12	–				
6) Is your child's appetite poor?	.31**	-.68**	-.75**	-.12	.51**	–			
7) Do you ever limit the amount of food that your child eats?	.20	.13	.14	.16	-.07	-.07	–		
8) Do you feed your child reduced-calorie foods such as low-fat milk, fat-free yogurt, or sugar-free teas?	.00	.23*	.17	.12	-.18	-.18	.13	–	
9) Do you restrict your child's diet due to food allergy or intolerance concerns?	.08	.09	.09	.10	-.07	-.07	.03	.01	–

* $p < .05$. ** $p < .01$.

TABLE 4. Parents mean score by offspring gender

	Male Offspring	Female Offspring
Mothers		
Pickiness	2.34	2.23
Struggle for control	2.10	2.78
Positive parenting	1.73	1.82
Food refusal	0.67	0.68
Worry that your child eats enough food	0.74	0.93
Child has a good appetite	0.74	0.91
Worry child is underweight	0.21	0.02
Fathers		
Pickiness	1.96	1.83
Struggle for control	4.09	3.14
Positive parenting	6.43	6.61
Food refusal	0.74	0.23
Worry that your child eats enough food	0.78	0.97
Worry child is underweight	0.13	0.00

some gender differences in what parents reported regarding certain behaviors pertaining to their offspring's eating habits. Mothers reported that their daughters ate enough food, but not that their sons did, $t(91) = 2.58, p < .01$. They also reported that their daughters had a good appetite, $t(91) = 2.26, p < .05$, in comparison to their sons. Finally, mothers worried about their sons being underweight, but not that their daughters were underweight, $t(91) = -3.22, p < .01$. Fathers also worried about their sons, but not their daughters, being underweight, $t(52) = -2.11, p < .05$, and reported that their daughters, but not their sons, ate enough food, $t(52) = 2.20, p < .05$.

Conclusion

To increase the knowledge of eating behaviors in early childhood, the current study examined correlates of parental perception of offspring body size, parental consistency in reports of offspring eating, and differential eating behaviors by offspring gender. Results indicated that mothers and fathers perceived their child's weight status similarly, but differed when giving reports of their child's eating habits. Furthermore, interesting patterns emerged, suggesting that parents report various eating behaviors differently depending on the gender of their child.

In most published studies (e.g., Fisher & Birch, 1999a), researchers gather information regarding children's eating habits from only the mother. However, results of the current study suggested that although mothers and fathers typically are reporting on the same eating-related constructs, they are not consistent when describing their child's eating behaviors. When rating their child's

level of pickiness and struggle for control at mealtimes, mothers and fathers report differently. They are, however, able to agree on their child's food refusal behaviors. This may occur because a child's blatant refusal of common foods is typically an overt response, whereas pickiness may occur more conspicuously. Parents may also inconsistently report their experience regarding struggling with their child for control at mealtimes because their child may engage in struggles differentially with each parent. If further research supports the current finding that mothers and fathers report differentially, it will be necessary for researchers to gather data from both parents when collecting data on this topic.

Other noteworthy gender trends became apparent in this sample. Mothers and fathers reported that their children experienced most problematic eating domains at approximately the same rate. Therefore, contradictory to previous findings by Marchi and Cohen (1990) that rates of pickiness are higher in young girls than in young boys, we found that boys and girls exhibit similar levels of pickiness. However, in this sample, mothers reported that their female and male children refused food at similar rates, whereas fathers reported that boys refused food more often.

Another noteworthy result concerns parents' perceptions of their child's body shape. No mother or father in the current study reported that their child was fat. In light of current child obesity estimates (CDC, 2004), it is unlikely that none of the 93 children in this sample was overweight. Based on the BMI data gathered from parents' reports of their child's height and weight, approximately 20% of girls and 18% of boys in this sample would be classified as overweight. This finding calls into questions parent's ability to accurately describe their child's body shape/size and their willingness to label their child as fat.

When correlating a parent's perception of his/her child with various weight and appetite-related items, interesting patterns emerged. Some of the differences between mothers' and fathers' reports were subtle. For example, describing their children as overweight was negatively correlated with worrying that their child would become underweight for mothers, whereas describing their child as overweight was positively correlated with worries that their child would become overweight for fathers. Other gender differences are more pronounced. For example, both parents reported that their daughters ate enough food when compared with their sons. They additionally worried that their sons, but not their daughters, were underweight.

Mothers, but not fathers, also reported that their daughters, but not their sons, had good appetites. These results are interesting, especially given that the weights and BMIs of the male and female children were essentially identical in this sample.

Social psychologists have maintained that society holds differential body ideals as a function of gender. Girls are encouraged to appear thin and to not overeat (Garner, Garfinkel, Schwartz, & Thompson, 1980), whereas boys are encouraged to become strong and muscular (Mishkind, Rodin, Silberstein, & Striegel-Moore, 1986) by eating hardily and maintaining a substantial weight. Although these differential expectations by gender have been shown to exist in older populations, this study suggests that parents may already be applying the belief systems with young children. If this finding is replicated, it may have important repercussions from a clinical standpoint. Parents may need to become aware that their inherent views on how their offspring should eat may affect their offspring's eating habits at very young ages.

An additional point of interest is that the current sample comprised offspring from a stratified community sample (one third of parents had a history of depression, one third had a history of a non affective disorder, and one third had no history of mental illness). This fact should be considered when generalizing its results to normal community samples. Analyses revealed that fathers with a depression history viewed their children as thinner than those without a depression history, whereas mothers without a history of depression were likely to rate their children as thinner. These effects were not moderated by offspring gender. Due to the exploratory nature of these analyses, independent cross-validation is necessary before confident explanations can be made. One preliminary explanation is that depression facilitates a view of worse outcomes for both fathers and mothers. For example, having a bigger child may be worse for mothers (thus, depressed mothers perceive bigger children), whereas having a smaller child may be worse for fathers (thus, depressed fathers perceive smaller children).

There were many strengths and limitations of the current study that should be considered. The first limitation concerns the small sample size. Another limitation is the fact that the children's heights and weights were reported by parents (not measured by laboratory technicians). Although some previous studies have demonstrated people's ability to accurately report their own weight and height (Cash, Counts, Hangen, & Huffine, 1989; Radke-Sharpe, Whitney-Saltiel, & Rodin, 1990; Shapiro & Ander-

son, 2003), we cannot be sure that parents were accurate informants of their offspring's weight and height. Future studies should include laboratory measurement of children to ensure accurate BMI estimates and to eliminate biases in parental reports. In addition, the total number of fathers who completed the assessment was relatively low. This fact resulted from a shortage of financial resources made available to the researchers. However, there is a possibility that selective biases exist because of the limited paternal data. Finally, eating patterns likely change during the early years of one's life. Thus, these conclusions may not remain stable as a child develops during early and middle childhood. Future longitudinal studies should assess how eating patterns change over development.

Despite these limitations, the current study presents important information regarding the accuracy of parental perceptions of offspring body size and how gender (of parents and children) may affect the nature and quality of mealtime interactions. First, it uniquely contributes to our knowledge by specifying the role that gender may play in parental perceptions of mealtime interactions with offspring. This study provides preliminary information suggesting that mothers and fathers perceive their female and male children differently in regard to eating habits, and that they may experience different interactions with their children as a function of their gender. The current article is also unique in that it examines the viewpoints of fathers.

Future studies should focus on extending and replicating the results of this study. One line of research that would be interesting involves the comparison of parental subjective reports of offspring body size with objective reports of BMI, particularly as both change developmentally. That information would make it possible for researchers to examine the accuracy of parental reports regarding offspring body shape, and to assess how it varies across the early childhood years. It is possible that parents are able to describe their children's bodies with better precision at particular ages. If it appears that parents are generally not accurate reporters of their children's body size, conclusions made from previous research that has focused predominantly on parental descriptions may become less valid. It will also be important for future research to include assessments of paternal interactions with offspring when examining mealtime behaviors, and to examine the degree to which parental expectations and thoughts regarding their offspring's feeding habits differ as a function of offspring gender. In addition, it would be inter-

esting to assess when these gender-related expectations first emerge in parents, and how they affect children as they age.

In conclusion, parents' subjective impressions of their child's body size are related to their perceptions of their child's appetite and weight status (e.g., underweight or overweight). In addition, these relationships are often affected by the child's gender. Finally, mothers and fathers appear to offer unique viewpoints regarding the nature of their children's eating habits. These conclusions should be incorporated into future research and clinical endeavours involving the eating and feeding behaviors of young children.

References

- Birch, L.L. & Fisher, J.O. (1998). Development of eating behaviors among children and adolescents. *Pediatrics*, 101, 539–549.
- Cash, T.F., Counts, B., Hangen, J., & Huffine, C.E. (1989). How much do you weigh? Determinants of validity of self-reported body weight. *Perceptual and Motor Skills*, 69, 248–250.
- Centers for Disease Control. (2000). [On-line]. Available: <http://www.cdc.gov/growthcharts/>
- Centers for Disease Control. (2004). [On-line]. Available: <http://www.cdc.gov/nchs/data/factsheets/nhanes.pdf>
- Cutting, T.M., Fisher, J.O., Grimm-Thomas, K., & Birch, L.L. (1999). Like mother, like daughter: Familial patterns of overweight are mediated by mothers' dietary disinhibition. *American Journal of Clinical Nutrition*, 69, 608–613.
- Fisher, J.O., & Birch, L.L. (1999a). Restricting access to foods and children's eating. *Appetite*, 32, 405–419.
- Fisher, J.O., & Birch, L.L. (1999b). Restricting access to palatable foods affects children's behavioral response, food selection, and intake. *American Journal of Clinical Nutrition*, 69, 1264–1272.
- Forbes, E.E., Cohn, J.F., Allen, N.B., & Lewinsohn, P.M. (2004). Infant affect during parent-child interactions at 3 and 6 months: Differences mothers and fathers and influences of parent history of depression. *Infancy*, 5, 61–84.
- Francis, L.A., Hofer, S.M., & Birch, L.L. (2001). Predictors of maternal child-feeding style: Maternal and child characteristics. *Appetite*, 37, 231–243.
- Gardner, R.M., Stark, K., Friedman, B.N., & Jakson, N.A. (2000). Predictors of eating disorder scores in children ages 6 through 14. A longitudinal study. *Journal of Psychosomatic Research*, 49, 199–205.
- Garner, D.M., Garfinkel, P.E., Schwartz, D., & Thompson, M. (1980). Cultural expectations of thinness in women. *Psychological Reports*, 47, 483–491.
- Hill, A.J., & Franklin, J.A. (1998). Mothers, daughters, and dieting: Investigating the transmission of weight control. *British Journal of Clinical Psychology*, 37, 3–13.
- Hood, M.Y., Moore, L.L., Sundarajan-Ramamurti, A., Singer, M., Cupples, L.A., & Ellison, R.C. (2000). Parental eating attitudes and the development of obesity in children. The Framingham Children's Study. *International Journal of Obesity and Related Metabolic Disorders*, 24, 1319–1325.
- Jacobi, C., Agras, W.S., & Hammer, L. (2001). Predicting children's reported eating disturbances at 8 years of age. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40, 364–372.
- Keel, P.K., Heatherton, T.F., Harnden, J.L., & Hornig, C.D. (1997). Mothers, fathers, and daughters: Dieting and disordered eating. *Eating Disorders: The Journal of Treatment and Prevention*, 5, 216–228.
- Klesges, R.C., Malott, J.M., Boschee, P.F., & Weber, J.M. (1986). The effects of parental influences on children's food intake, physical activity, and relative weight. *International Journal of Eating Disorders*, 5, 335–346.
- Klesges, R.C., Stein, R.J., Eck, L.H., Isbell, T.R., & Klesges, L.M. (1991). Parental influence on food selection in young children and its relationships to childhood obesity [published erratum appears in *American Journal of Clinical Nutrition* 1991 Dec; 54(6):iv]. *American Journal of Clinical Nutrition*, 53, 859–864.
- Lask, B., & Bryant-Waugh, R. (2000). *Anorexia nervosa and related eating disorders in childhood and adolescence* (2nd ed.). Hove, UK: Psychology Press.
- Lewinsohn, P.M., Denoma, J.M., Gau, J.M., Joiner, T.E., Striegel-Moore, R., Bear, P., & Lamoureux, B. (in press). Problematic eating and feeding behaviors of 36-month-old children. *International Journal of Eating Disorders*.
- Lewinsohn, P.M., Hops, H., Roberts, R.E., Seeley, J.R., & Andrews, J.A. (1993). Adolescent psychopathology: I. Prevalence and incidence of depression and other DSM-III-R disorders in high school students. *Journal of Abnormal Psychology*, 102, 133–144.
- Lewinsohn, P.M., Rohde, P., Klein, D.N., & Seeley, J.R. (1999). Natural course of adolescent major depressive disorder: I. Continuity in young adulthood. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 56–63.
- Marchi, M., & Cohen, P. (1990). Early childhood eating behaviors and adolescent eating disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 29, 112–117.
- Mishkind, M.E., Rodin, J., Silberstein, L.R., & Striegel-Moore, R.H. (1986). The embodiment of masculinity: Cultural, psychological, and behavioral dimensions. *American Behavioral Science*, 29, 545–562.
- Mukai, T. (1996). Mothers, peers, and perceived pressure to diet among Japanese adolescent girls. *Journal of Research on Adolescence*, 6, 309–324.
- Pike, K.M., & Rodin, J. (1991). Mothers, daughters, and disordered eating. *Journal of Abnormal Psychology*, 100, 198–204.
- Radke-Sharpe, N., Whitney-Saltiel, D., & Rodin, J. (1990). Fat distribution as a risk factor for weight and eating concerns. *International Journal of Eating Disorders*, 9, 27–36.
- Ricciardelli, L.A., & McCabe, M.P. (2001). Children's body image concerns and eating disturbance. A review of the literature. *Clinical Psychology Review*, 21, 325–344.
- Ricciardelli, L.A., McCabe, M.P., & Banfield, S. (2000). Body image and body change methods in adolescent boys. Role of parents, friends, and the media. *Journal of Psychosomatic Research*, 49, 189–197.
- Rolls, B.J., Fedoroff, I.C., & Guthrie, J.F. (1991). Gender differences in eating behavior and body weight regulation. *Health Psychology*, 10, 133–142.
- Rydell, A., Dahl, M., & Sundelin, C. (1995). Characteristics of school children who are choosy eaters. *The Journal of Genetic Psychology*, 156, 217–229.
- Shapiro, J.R., & Anderson, D.A. (2003). The effects of restraint, gender, and body mass index on the accuracy of self-reported weight. *International Journal of Eating Disorders*, 34, 177–180.
- Spruijt-Metz, D., Lindquist, C.H., Birch, L.L., Fisher, J.O., & Goran, M.I. (2002). Relation between mothers' child-feeding practices and children's adiposity. *The American Journal of Clinical Nutrition*, 75, 581–586.
- Stein, A., Murray, L., Copper, P., & Fairburn, C.G. (1996). Infant growth in the context of maternal eating disorders and maternal depression: A comparative study. *Psychological Medicine*, 26(3), 569–574.
- Thelen, M.H., & Cormier, J.F. (1995). Desire to be thinner and weight control among children and their parents. *Behavior Therapy*, 26, 85–99.

Copyright of International Journal of Eating Disorders is the property of John Wiley & Sons Inc.. The copyright in an individual article may be maintained by the author in certain cases. Content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.